

Claims

1. Mixtures containing

- 5 A) at least two different acrylic acid-C₁-C₆-alkylesters;
- B) at least a compound from the group comprising C₁-C₈-mercaptans, C₄-C₁₂-thiophenes, C₂-C₈-sulphides or C₂-C₈-disulphides;
- 10 C) at least a compound from the group comprising norbornenes, C₁-C₅-carboxylic acids, C₁-C₈-aldehydes, C₆-C₁₄ phenols, C₇-C₁₄ anisoles or C₄-C₁₄ pyrazines;
- D) if necessary an antioxidant.

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2. Mixtures according to Claim 1, characterised in that these contain:

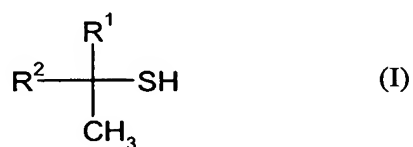
- A) at least two different acrylic acid-C₁-C₄-alkylesters;
- 20 B) at least a compound from the group comprising C₁-C₈-mercaptans, C₄-C₈-thiophenes, C₂-C₈-sulphides or C₂-C₈-disulphides;
- C) at least a compound from the group comprising norbornenes, C₂-C₅-carboxylic acids, C₂-C₅-aldehydes, C₆-C₁₀ phenols, C₇-C₁₀ anisoles or
- 25 C₄-C₁₀ pyrazines;
- D) at least an antioxidant.

3. Mixtures according to Claim 1, characterised in that these contain:

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A) acrylic acid methyl esters, acrylic acid ethyl esters and if necessary a further acrylic acid-C₁-C₆-alkylester;

5 B) at least a compound from the group comprising thiopenes, tetrahydrothiophenes, dimethyl sulphides, diethyl sulphides, di-n-propyl sulphides, diisopropyl sulphides, dimethyl disulphides, diethyl disulphides, di-n-propyl disulphides, diisopropyl disulphides or mercaptans of formula (I)



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where

15 R¹ signifies hydrogen, methyl or ethyl, preferably methyl, and

R² signifies an alkyl group with between 1 and 4 carbon atoms, preferably methyl, ethyl, isopropyl, isobutyl or tert.-butyl;

20 C) at least a compound from the group comprising norbornene, 2,5-norbonadienes, C₂-C₅-carboxylic acids, C₂-C₅-aldehydes, C₁-C₄-monoacetylated pyrazines, and C₁-C₄ monoalkylated phenols;

D) at least an antioxidant.

25 4. Mixtures according to Claim 1, characterised in that these contain:

A) acrylic acid methyl esters and acrylic acid ethyl esters;

B) tert.-butylmercaptans;

- C) at least a compound from the group comprising norbornenes, propionaldehydes, isovaleraldehydes, isovalerianic acids, 2-ethyl phenols, 4-ethyl phenols, 2-acetyl pyrazines;
- 5 D) at least an antioxidant.
5. Mixtures according to at least one of Claims 1 to 4, characterised in that these contain an antioxidant chosen from among tert.-butyl hydroxytoluol, tert.-butyl hydroxyanisole or hydroquinone mono-methylether.
- 10 6. Mixtures according to at least one of Claims 1 to 5, characterised in that these mixtures contain:
- 15 60-97% by weight of components A),
1-40% by weight of components B),
1-40% by weight of components C)
and 0.05-2% by weight of components D).
- 20 7. Mixtures according to at least one of Claims 1 to 5, characterised in that these mixtures contain:
- 25 70-95% by weight of components A),
2-30% by weight of components B),
2-30% by weight of components C)
and 0.1-1% by weight of components D).
8. Mixtures according to at least one of Claims 1 to 7, characterised in that the weight ratio between components B) and components C) is in the range 3: 1 to 1 : 3.

9. Use of mixtures according to at least one of Claims 1 to 8 for odorization of liquid gas.
10. Liquid gas containing mixtures according to at least one of Claims 1 to 8.
- 5 11. Method for odorization of liquid gas, characterised in that a mixture according to at least one of Claims 1 to 8 is added to the liquid gas.
- 10 12. Method according to Claim 11, characterised in that the mixture is added to the liquid gas in a quantity of 5 – 100 mg / kg of liquid gas.